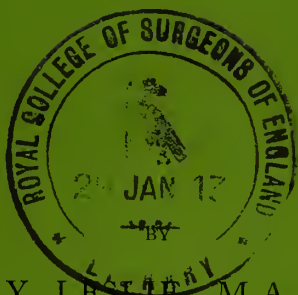


12.

VISCEROPTOSIS AND ITS TREATMENT



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With Note on Chronic Intestinal Stasis from the Radiographic Aspect. By ALFRED JORDAN, M.D., Medical Radiographer
to Guy's Hospital and Royal Hospital for Diseases of the Chest

From "THE CLINICAL JOURNAL," Wednesday, May 1, 1912

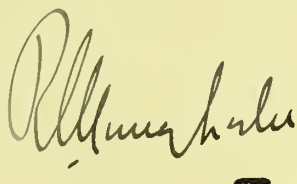
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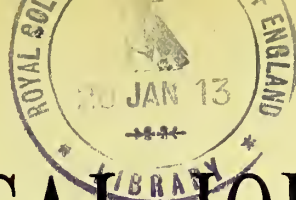
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THE CLINICAL JOURNAL,

CLINICAL RECORD, CLINICAL NEWS, CLINICAL GAZETTE, CLINICAL REPORTER,
CLINICAL CHRONICLE, AND CLINICAL REVIEW.

No. 1018.

WEDNESDAY, MAY 1, 1912.

Vol. XL. No. 4.

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VISCEROPTOSIS AND ITS TREATMENT.*

By R. MURRAY LESLIE, M.A., B.Sc., M.D.,
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Chest.

VISCEROPTOSIS, which may be defined as a "dropping" of one or more of the abdominal viscera, is now becoming widely recognised as one of the commonest of all clinical conditions, although until recent years its significance has not been fully appreciated, while the importance of the sequelæ upon which most of the symptomatic manifestations actually depend is only now beginning to be realised by a comparatively small section of the medical profession.

As far back as 1853 the great Pathologist Virchow described displacement of the intestines, which he at that time ascribed to local peritonitis, and which appeared to be the cause of certain forms of dyspepsia. It was not, however, until 1885 that Dr. Glenard,† of Vichy, gave the first more or less complete description of enteroptosis, and which therefore sometimes goes by the name of Glenard's disease. This observer reported no less than 148 cases, and in most of them he associated the condition with a certain type of nervous dyspepsia.

Recent writers prefer to use the term visceroptosis or splanchnoptosis as the generic title, and employ the terms gastroptosis, enteroptosis, coloptosis, nephroptosis, hepatoptosis or splenoptosis according as to whether the displacement entirely or mainly affects the stomach, the bowel, the colon, the kidney, the liver or the spleen as the case may be.

Visceroptosis is such a common condition that probably at least one out of every three women

* A Lecture delivered at the Medical Graduates' College and Polyclinic.

† Glenard, 'Lyon Medical,' 1885.

are affected with an appreciable degree of displacement of one or more organs, particularly the right kidney and intestine. Einhorn found the condition in no less than 33 per cent. of all his female patients, the accuracy of which observation has been confirmed by others. In the majority of cases dropping of one organ is associated more or less with dropping of other organs. As will be shown presently the mere dropping of the organs is not of such significance as its pathological sequelæ.

CAUSATION.

As regards causation, many authorities believe that the condition is frequently *congenital*. Glenard himself thought that the main cause was a constitutional weakness or looseness of the mesenteric and other peritoneal attachments.

He laid great stress upon the frequent presence of a horizontal cord-like thickening which he took to represent the contracted band of the transverse colon, and believed that the starting-point in visceroptosis was the dropping of the hepatic flexure of the colon due to relaxation of the hepatocolic ligament.

Landau, on the other hand, was of opinion that the primary cause was a congenital weakness of the abdominal walls.

A particular body type has been described—a slender skeleton, a long attenuated thorax, with sometimes a floating tenth rib, soft, flabby abdominal muscles, and a defective development of the panniculus adiposus. According to Dr. Harris the main congenital abnormality is a marked contraction of the base of the thorax.

Other observers, however, are equally emphatic in stating that visceroptosis is more often an *acquired* condition. Arbuthnot Lane and one or two other observers explain the abnormality from the standpoint of evolution. Quadrupeds do not appear to suffer from visceroptosis, and accordingly it seems conceivable that the assumption of the erect posture by man may be directly responsible for the dropping of the viscera owing to the effect of gravity coming into play, and so causing the abdominal viscera to tend to fall from their own weight. The abdominal walls, particularly if lax and flabby, are often unable to support this extra strain, while the constant drag on the visceral attachments from early childhood onwards may play a conspicuous part in producing the condition.

Mr. Lane, indeed, states that in civilised countries the erect or semi-erect posture is maintained during all one's waking hours, for no less than sixteen or seventeen out of the twenty-four hours each day, during the whole of which time there exists a constant tendency to the falling of the viscera in the abdomen. This is in sharp contra-distinction to the habit of life among our primitive ancestors, who probably spent the greater part of the twenty-four hours lying or squatting on the ground. In this connection it is possible to imagine that the different obliquity of the pelvic brim in the female would partly account for the greater frequency of the condition among women, the pubic arch giving less support to the overlying viscera, particularly when taken in conjunction with the wearing by them of wrongly constructed corsets—which Einhorn believes to be an important causal factor, particularly when the corset exerts pressure on the base of the thorax and upper part of the abdomen—while the more lax condition of the abdominal walls in women would offer less resistance to the downward pressure.

Keith was of opinion that the condition is often due to wrong method of respiration, and according to him the contraction of the diaphragm, and particularly of its crura, is the important factor in producing downward displacement of the underlying organs.

An argument in favour of the frequent presence of some congenital defect lies in the observation that young unmarried Swedish girls who have never worn corsets, and native women who wear no constrictive bands of any kind, and even quite young children in civilised countries, may have the condition quite well developed.

There is no doubt, however, that such conditions as stretching of muscles and relaxation of ligaments due to repeated pregnancies, constricting bands, wasting and asthenic diseases may all be important causal factors in individual cases. The solid kidney and the habitually overloaded stomach and colon, as might be expected, are particularly prone to prolapse. The probability is that in a civilised community we often have to do with both acquired and congenital causes. Among secondary contributing causes we may mention strains, as in lifting weights, emaciation with loss of fat and a general constitutional condition of neurasthenia with muscular debility.

As regards age, the majority of cases occur between twenty and fifty, though the condition has been found in quite young children.

As regards sex, the condition is much more common in women than in men. Glenard found floating kidney in 22 per cent. of his women patients as compared with $2\frac{1}{2}$ per cent. of his men patients, while the records of the Johns Hopkins Hospital showed that one out of every five women and one out of every fifty men had movable kidney, giving a proportion of ten to one. Meinert found gastropsis in no less than 80 per cent. of all his gynæcological patients, while Thompson found that this variety of visceroptosis was six times more common in women than in men. The marked preponderance of right-sided displacement of the kidneys is attributed by some authorities to the fact that the right kidney is situated in close apposition with the heavy liver, through the medium of which it is subjected to a movement of depression with each inspiratory descent of the diaphragm. On the other hand, Arbuthnot Lane believes that the drag exerted upon the kidneys by the large bowel, owing to adhesions, is much greater on the right side than on the left, and hence the mobility of the right kidney is correspondingly greater. According to this observer, the other two factors in inducing dropping of the kidney are, on the one hand, the absorption of fat, which he states is often the result of intestinal auto-intoxication, and on the other, enfeeblement of the abdominal walls, which may have the same origin. Indeed, he goes further, and asserts that these last two factors, namely, the rapid loss of fat and the associated degenerative changes in the abdominal muscles and supporting tissues, so commonly met with in chronic constipation, affect more or less all the viscera in the abdomen, which thus lose their natural supports and a condition of visceroptosis ensues. He is of opinion that the bulky liver has been unduly blamed for much trouble which is actually produced by faulty mechanics in the intestines. Mr. Lane also believes that the customary sitting posture during the act of defæcation almost invariably adopted in civilised countries as contrasted with the natural squatting posture, is partly responsible for forcing the viscera, and more particularly the cæcum and transverse colon, into the true pelvis. He states that in the squatting posture the forcible apposition of the thighs on the

abdomen empties the cæcum and transverse colon, retains the kidneys and other viscera in position during the period of greatest strain, forces up the sigmoid, drags the rectum upwards and straightens it, so that the passing of fæces through the rectum is very materially facilitated. These physiological facts should be brought before the notice of our sanitary engineers, who could easily give facilities for the adoption of the natural squatting attitude, the present high seats being specially harmful in the case of short men, women and children—a fact which is now sufficiently well recognised to make the provision of footstools in private lavatories an accepted necessity. Indeed, the greater frequency of constipation among women and children may be more commonly due to this cause than is generally supposed, while this factor in association with constipation and its effects may have a larger share in accounting for the greater frequency of visceroptosis among women than either the corset or the general relaxation due to repeated pregnancies. In this connection it may be stated that the abdomen of the woman is placed at a considerable mechanical disadvantage as compared with that of the man in virtue of its greater relative length, while the mechanical interference exerted by an over-loaded cæcum and colon is exaggerated in the woman by the constriction of the waist and by the imperfect development of the abdominal muscles.

DEGREES OF VISCEROPTOSIS.

In *gastropsis* the prolapsed stomach as a rule occupies a semi-vertical position, the pyloric end descending while the cardiac end is more or less fixed (see Figs. 1 and 2). When there is much atony present in addition to the ptosis, Dr. Hertz* has shown that the lowest part of the stomach sags so deeply and the body of the stomach becomes so stretched that the lumen of the body may become actually obliterated when the patient is in the vertical position, a condition which disappears immediately after the horizontal position is assumed. The dilated lower end may be found right down in the false pelvis.

The condition of gastropsis is often not diagnosed owing to the fact that it may be quite normal in position when the patient lies down on the examining couch, and yet drops down to quite a low level as soon as the erect posture is assumed.

* 'Brit. Med. Journ.,' February 3rd 1912, p. 225.

In the case of *enteroptosis* the position of the bowel varies very considerably, according as to whether the patient is lying down or standing up. The most definitely prolapsed portions are usually the lower end of the ileum behind the ileo-cæcal bowel; the cæcum and transverse colon, all of which may be found bunched together within the false pelvis, and not infrequently passing down into the true pelvis (see Fig. 9), and so interfere with the functions of the true pelvic organs.

The U-shaped displacement of the transverse colon into the pelvis will be referred to later, and is represented in Figs. 6 and 7.

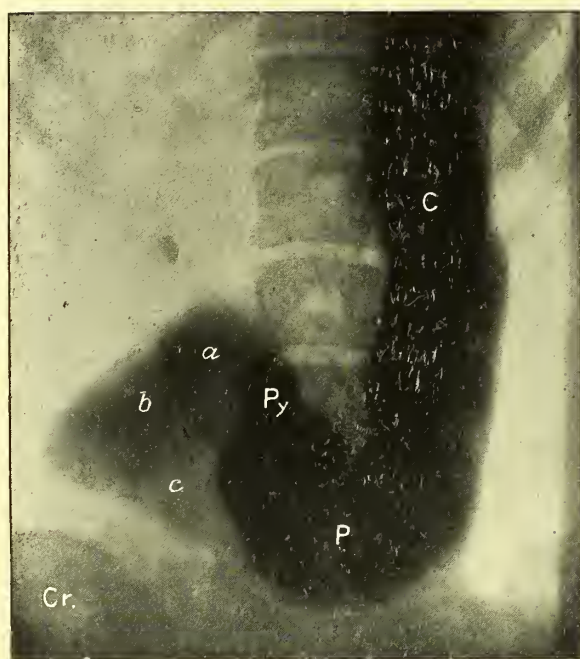


FIG. 1.—The long dropped stomach and duodenum in a case of suspected duodenal ulcer. The distended duodenum on examination with the fluorescent screen appeared to be struggling to overcome some obstruction at its outlet. C, P. Cardiac and pyloric portions of stomach. Py. Pylorus. a, b, c. First, second and third parts of the duodenum. Cr. Crest of the ileum. (Radiogram by Dr. Alfred Jordan.)

As regards the *kidneys*, all degrees of mobility and displacement may be found. The organ may be just palpable below the costal margin (see Fig. 2), or it may be freely movable in every direction and may be actually found within the pelvis.

The *liver* is not usually so markedly displaced as the other abdominal organs, owing to the strong diaphragmatic attachments, and to the fact of its fitting so accurately into the dome of the diaphragm.

I recently, however, saw a well-marked case of hepatoptosis where the lower end of the liver was found at the level of the umbilicus, with its upper border almost corresponding to the right costal margin. The condition is clinically important in so far as it is apt to be mistaken for enlargement of the liver. Keith suggests that the frequency of gall-stones in cases of enteroptosis may be the result of descent of the liver producing prolapse of the duodenum, head of the pancreas and termination of the common bile-duct, thus partially obstructing the entrance and exit of the bile to and from the gall-bladder.

The *spleen* may be very much displaced, and is usually associated with other forms of visceroptosis.

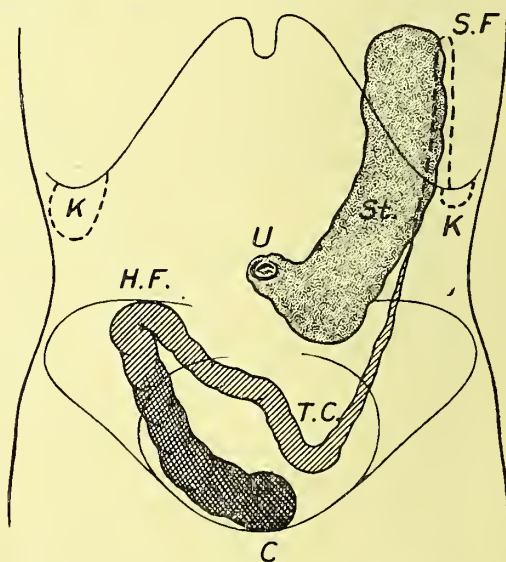


FIG. 2.—Case of general visceroptosis and gastro-intestinal stasis. The lower limit of convexity of stomach displaced towards false pelvis with pylorus at level of umbilicus. Cæcum had dropped down into true pelvis, being situated behind pubic arch. Note dropping of hepatic flexure in contrast with splenic flexure, fixed high up near dome of diaphragm by costo-colic ligament. Lower limit of V-shaped transverse colon reached down to the true pelvis. The right kidney was freely movable, while left kidney was palpable below costal margin. As indicating the general stasis I may mention that four hours after the bismuth meal none had left the stomach. It was ten hours later before the bismuth had gone into the cæcum and ascending colon, a considerable amount still remaining in the stomach. Thirty hours had elapsed before the bismuth had reached the upper part of the ascending limb of the V-shaped transverse colon. (Case radiographed by Dr. Hertz.)

The spleen has been met with so low down that it has on more than one occasion been mistaken for a tumour of one of the pelvic organs.

It is readily understood how prolapse and backward displacement of the uterus may be produced owing to the super-position of the abdominal organs bunched into the false pelvis.

PATHOLOGICAL CHANGES CONSEQUENT ON VISCEROPTOSIS.

Mr. Arbuthnot Lane's* epoch-making investigations in regard to the mechanism of the various pathological changes induced by visceroptosis and intestinal stasis have quite revolutionised our ideas on this important question, and his observations have been in large part confirmed by others, particularly by Mr. Charles Mayo, of Rochester, and other observers in America, where Mr. Lane's brilliant exposition is hailed almost as a new gospel. Proverbially a prophet hath no honour in his own country or city, but personally I feel convinced, not alone from my study of Mr. Lane's writings, but from personal experience of quite a considerable number of cases, that Mr. Lane's theories, possibly in a slightly modified form, will emerge triumphant. It would be quite impossible in this lecture to go fully into the matter, but I shall attempt to indicate the principal points as clearly as I can, illustrating these as far as possible from cases which have come under my own immediate observation.

The three principal phenomena resulting from dropping of the viscera are :

- A. *The formation of adhesions*—along the lines of resistance to downward displacement.
- B. *The production of kinks*—along the course of the gastro-intestinal tract.
- C. *Gastro-intestinal stasis*—with delayed digestion, constipation, and auto-intoxication.

A. ADHESIONS.

These adhesions are in no sense the result of inflammation, but are in reality conservative structures developed so as to exert the beneficial effect of opposing the natural tendency to dropping of the viscera due to the action of gravity during the long hours from early morning until late at night that the individual is in the erect posture.

* "Operative Treatment of Chronic Constipation," CLINICAL JOURNAL, 1901, Nisbet & Co., Ltd., 1909; "Papers on Adhesions, Kinks, Distension Changes, and Intestinal Stasis," 'Surg., Gyn., and Obstet.,' Chicago, 1910, vol. xi, and 1911, vols. xii and xiii; 'Lancet,' April 30th, 1910; 'Brit. Med. Journ.,' April 22nd, 1911, p. 913.

When a viscus drags upon its mesenteric attachment a thickened fibrous band forms along "the line of drag," and may be so strong as to merit the name of an acquired or supplementary mesentery. Thus, in the case of the colon, such a mesentery may contract and form a definite suspensory ligament, securely fixing the bowel and so preventing its downward displacement into the true pelvis, where its presence would naturally interfere with the functions of the pelvic organs. These acquired mesenteries and adhesions are described by Mr. Lane as being "the crystallisation of lines of resistance to downward displacement of viscera."

In common with many others I was at first extremely sceptical as to the presence and significance of these adhesions, but six years ago I became a convert as the result of my observation of a particular case of chronic intestinal stasis of many years' standing. After trying the usual medical and hygienic remedies without permanent benefit, and as the patient was steadily losing weight and appeared to be actually sinking from asthenia, I took her to Mr. Lane, who eventually short-circuited the ileum into the sigmoid colon and resected the remainder of the large bowel. Several thick adhesive bands were clearly demonstrated at the operation such as I had never observed during a long post-mortem experience as a hospital pathologist, and which were certainly abnormal. My later experience of a considerable number of similar post-operative demonstrations preceded by radiographic examinations has only tended to strengthen my belief in the importance of these adhesive structures, and I feel I can with confidence predict that a similar view will sooner or later be universally accepted by both physicians and surgeons.

In the case of the *stomach*, which in the erect posture is apt to be displaced downwards by its contents after a meal, and by the drag of a loaded or over-loaded transverse colon, the natural gastric supports, viz. the œsophageal tube and the weak lesser omentum, are often unequal to the strain, and accordingly a supplementary support in the form of a new adhesive band forms between the pylorus and the under surface of the liver in front of its transverse fissure, extending along the cystic duct and gall-bladder.

This anchoring of the pylorus to the liver with the drag downwards of its convex greater curvature

by the loaded transverse colon leads to difficulty in evacuation of the stomach contents, and consequent progressive dilatation ensues.

Adhesions are specially apt to form in the case of the different portions of the large intestine. A chronically distended *cæcum* tends to drop into the pelvis, but Nature intervenes, and endeavours to prevent this displacement by developing adhesions between the outer aspect of the *cæcum* and the parietal peritoneum covering the adjacent abdominal wall, and in many cases a supplemental mesentery is formed. These adhesions, while anchoring the *cæcum*, occasionally constrict its lumen and render it liable to partial obstruction, and what is perhaps still more important, are apt to involve the appendix, with disastrous results, as we shall see later.

As regards the colon proper, the *hepatic flexure* may develop a special band of adhesions, fixing it to the right kidney and adjacent abdominal wall, and this attachment may be an important causal factor in producing ptosis of this kidney. The *splenic flexure*, in contrast with the hepatic flexure, is naturally well anchored, being fixed high up at the level of the dome of the diaphragm by the strong costo-colic ligament, which no doubt becomes thickened as the downward strain develops.

The *transverse colon*, with its two extremities thus fixed, tends to fall in the form of a U-shaped loop, which may pass right down into the true pelvis. Similarly adhesions may form between the limbs of the U-shaped transverse colon and the ascending and descending colons respectively, thus tending to fix this part of the bowel in its abnormal position.

The *descending colon* may also become adherent on its outer surface to the peritoneum covering the adjacent abdominal wall.

Similar adhesions form in connection with the *sigmoid* loop, and according to Mr. Lane, form the first supplementary mesentery that is acquired after the erect posture is assumed, and which he has observed well developed in a child, *æt.* 2 years, whom he had short-circuited for tuberculous disease. This band develops in order to resist the tendency to the downward displacement of the large bowel into the true pelvis. In thus fixing the sigmoid at the level of the brim of the true pelvis on the left side the beneficial effect of this adhesive band is obvious. At the same time, there is a tendency for these supplementary peritoneal adhesions

to narrow the lumen of the gut, and thus obstruct the passage of solid faecal matter through it. The resulting difficulty of evacuation of its contents may lead to sacculation of the bowel and ulceration of the mucous membrane. In the case of the patient already alluded to, we found the left ovary, as is not infrequently the case, involved in the sigmoid adhesions, processes from which actually passed into the substance of the ovary, which was undergoing cystic degeneration, and was accordingly excised. Mr. Lane believes that volvulus of the sigmoid is the result of rotation of the sigmoid loop upon a base formed by its two extremities approximated by contracted adhesions.

In all parts of the colon wasting of the involuntary muscular tissue of the walls and consequent atony of the bowel frequently develops as the result of diminution of functioning power consequent on fixation due to these adhesions.

B. KINKS.

Ewald believed that the frequency of constipation in women was largely the result of kinks produced in connection with visceroptosis, and was of opinion that in addition to actual mechanical obstruction these kinks and the dragging of the peritoneal bands produced a reflex irritation of the bowel and consequent interference with both its motor and secretory function. It is to Arbuthnot Lane, however, that we owe our present knowledge of intestinal kinks, their mode of production, and their direct and indirect effects; and although, like all enthusiasts, he may make greater claims than the actual facts may seem to warrant, yet the scientific truth of his main contentions, though recently hotly disputed, has never been disproved.

Let us look at some of these kinks which form in the course of the gastro-intestinal tract.

(1) *Pyloric Kink.*

Beginning with the stomach, it will be remembered that reference has been made to an adhesive band which may form between the pylorus and the under surface of the liver. This supplementary ligament hitches up the pylorus, and accordingly when the stomach is distended and its convexity displaced downwards it tends to kink and obstruct the pyloric outlet.

The stagnation of the stomach contents thus

produced may lead to various alterations in their chemical composition, and thus act as a potent cause of erosion and ulceration of the gastric mucous membrane.

(2) *Duodeno-jejunal Kink.*

The termination of the duodenum is securely fixed by a peritoneal band, which may become thickened, while the commencement of the jejunum on the other hand is perfectly mobile. In cases of



FIG. 3.—Dilated duodenum with partial obstruction due to kinking at the duodeno-jejunal junction. *a*, *b*, *c*. First, second, and third parts of the duodenum. *U*. Umbilicus, marked by a penny. *Cr.* Crest of ileum (confirmed by operation). (Radiogram by Dr. Alfred Jordan.)

ptosis of the ileum and the lower portion of the alimentary tract the commencement of the jejunum is dragged downwards, and accordingly a sharp kink develops at the duodeno-jejunal junction.

As a result of this kinking there is distension of the duodenum, most marked in the first portion, which is mobile and covered by peritoneum (see Figs. 1, 3, and 4). This distension may lead to congestion, abrasion or ulceration of the mucous membrane of the first part of the duodenum, and

also to organismal infection of the bile- and pancreatic ducts followed by formation of gall-stones and pancreatitis. It is possible that cancer of the stomach, bile-ducts, and pancreas may also be induced by the constant irritation produced in this manner. According to Mr. Lane, the chief value, if any, of gastro-enterostomy in the treatment of duodenal ulcer consists, not in the formation of the new opening, but in the anchoring of the mobile commencement of the jejunum so that it cannot kink upon the fixed duodenum.

Dr. Hertz, in an article published in the 'Lancet' of February 3rd, 1912, states, on the other hand, that he has never observed true stasis in the duodenum except in cases of organic

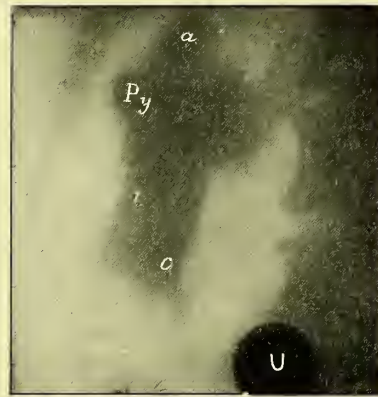


FIG. 4.—Case of woman, æt. 27 years, at present under author's care, who had been suffering for some time from obstinate dyspepsia. *Py*. Pylorus. *a*, *b*, *c*. First, second, and third parts of duodenum. With the fluorescent screen the duodenum was found to be elongated and considerably dilated. There was noticeable delay in the passage of the bismuth meal out of the duodenum, which exhibited well-marked "writhing" movements, due to kinking of the duodeno-jejunal junction. (Radiogram by Dr. Alfred Jordan.)

obstruction, and to a less extent in extreme gastroptosis, when a kink may occur at the point where the duodenum becomes fixed. He is convinced that kinking of the duodenum plays no part in the ætiology of duodenal ulcer owing to the hypertonic condition of the stomach present in these cases, and invariably associated with an unusually rapid progress of the chyme into the small intestine.

Personally, however, the radiographic evidence in several of my own cases has convinced me that distension of the duodenum does often occur as above described, being frequently a sequela, as we

shall see later, of antecedent ptosis and kinking of the ileum.

Dr. Jordan* states that he has repeatedly diagnosed the condition by radiography beforehand and subsequently seen it confirmed at operations. He has seen the distended duodenum held in a grip at its termination and the jejunum hanging down vertically at its commencement, and in some cases rotated upon its axis, producing a certain degree of torsion, which naturally increases the obstruction. By means of the fluorescent screen the distended duodenum can frequently be seen writhing and struggling to overcome the obstruction. He further states that at operations for intestinal stasis the duodenum is almost always found to be distended, thickened, red, and prominent.

At the same time it may be admitted that the obstruction at the duodeno-jejunal kink can in the majority of cases be overcome by reflex peristaltic contraction of the stomach and duodenum, particularly after the stimulus of a meal, thus relieving the distension in the first duodenal segment. It is, however, only reasonable to suppose that constantly recurring distension is apt to lead sooner or later to congestion and erosion of the mucous membrane. When obstruction exists there is usually considerable pain and tenderness in the duodenum, most marked two or three hours after meals, often greatly relieved by assuming the recumbent posture, when the kink generally disappears and the obstruction is thereby removed.

(3) *The Ileal Kink* (Lane's).

I have already referred to the tendency of the cæcum to become displaced into the true pelvis, which is opposed by the formation of bands of adhesion fixing its external surface to the abdominal wall. Internally to the cæcum there is also a drag upon the termination of the ileum and the posterior layer of its mesentery. At this point a thickened layer of peritoneum is formed, which kinks the ileum.

Dr. Alfred Jordan has made many interesting observations of this ileal kink in its various forms by means of radiography after bismuth meals, and shows that the exact position of the kink varies greatly in individual cases (Fig. 5 shows

appearance in supine position). In the upright posture the cæcum will tend to fall towards the pelvis, leaving the fixed point of the ileum tied up; the two portions of the terminal coil of the ileum above and below the kink may often be seen to hang down vertically, and may produce such marked obstruction as to cause great dilatation of the end of the ileum, which may become actually larger than the cæcum itself. Mr. Lane has shown that in addition to the ordinary vertical kinking there is usually a certain amount of torsion present due to the drag of the coil upon its mesentery. Before leaving the ileal kink it is



FIG. 5.—Ileal kink in a man, æt. 71 years. Taken twenty-four hours after a bismuth meal. Showing a long terminal coil of the ileum, hitched up for the upper three inches and obstructed in the last inch (confirmed by operation, and the patient cured). A duodenal ulcer was found at the operation. *u*, Umbilicus. In the erect attitude the cæcum dropped, making the kink much more obvious. (Radiogram by Dr. Alfred Jordan.)

interesting to note that the duodeno-jejunal kink is really, in most cases, secondary to the ileal kink, which is the real cause of the distension of the ileum, which drags down the mobile commencement of the jejunum.

I recently had under my care an old lady, æt. 72 years, suffering from constipation and great pain and tenderness in two situations, one well below the umbilicus and to the right of the middle line, and the other well above the umbilicus and to the right. I made the diagnosis of intestinal stasis

* 'Proc. Roy. Soc. Med.,' 1911, vol. v; 'Practitioner,' 1911, vol. lxxxvi; 'Brit. Med. Journ.,' 1911, vol. i, p. 1172.

and gall-stones, which was confirmed by Mr. Lane, who further diagnosed an ileal kink.

At the operation a well-marked ileal kink was discovered and the adhesive band divided. The gall-bladder was opened, and several gall-stones removed.

Immediately after the operation the pain low down in the right side entirely disappeared, and the patient is now enjoying good health.

(4) *Kink of the Appendix.*

I have already referred to the fact that the appendix frequently becomes involved in the pericæcal adhesions. An acquired mesentery is often formed which anchors the appendix in such

appendicitis; in other words, that the appendicitis is the primary condition and the kink only secondary. This observer does not believe that the ileal kink is of any importance in the ætiology of simple constipation, as a delay of more than a few hours has never been observed by him at the end of the ileum, and this is merely an exaggeration of the normal delay caused by the ileo-cæcal sphincter. The evidence upon which Dr. Hertz bases these dogmatic opinions and categorical statements appears to me inconclusive. The weight of evidence seems strongly in favour of Mr. Lane's contention.

(5) *The Kinks of the Hepatic and Splenic Flexures.*

I have already spoken of the U-shaped ptosis of

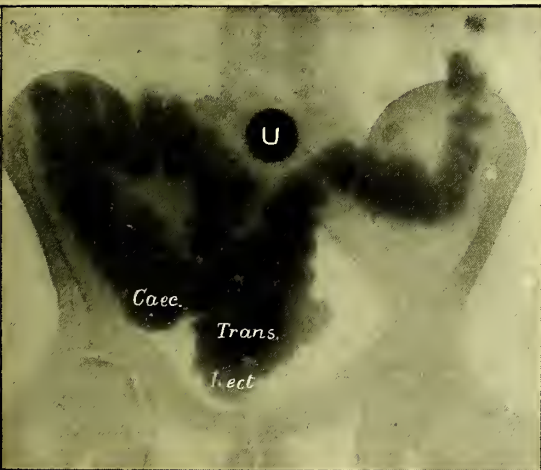


FIG. 6.—Taken 102 hours after a bismuth meal, in a man, æt. 36 years, showing extreme stasis in the transverse colon, which is greatly elongated and dropped. The hepatic flexure does not rise as high as the iliac crest. *Trans.* Transverse colon. *Rect.* Rectum. *U.* Umbilicus. (Radiogram by Dr. Alfred Jordan.)

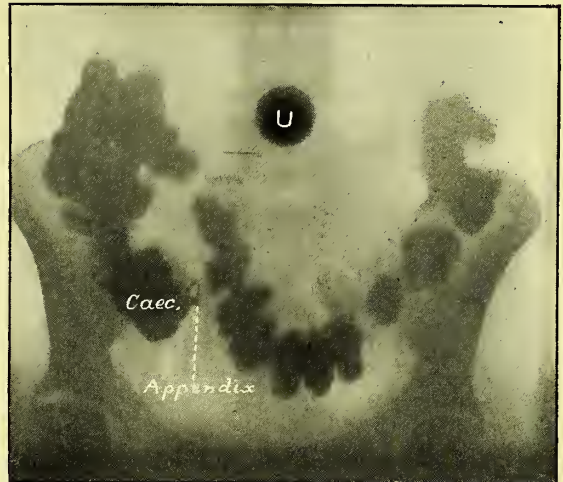


FIG. 7.—Taken thirty-four hours after a bismuth meal in a girl, æt. 13 years, showing stasis with marked dropping of the transverse colon. The appendix is also shown. (Radiogram by Dr. Alfred Jordan.)

a way that its distal portion is more or less abruptly flexed upon its proximal part. When the cæcum is loaded it exerts a vertical strain upon the proximal portion of the appendix, causing it to become flexed or kinked abruptly at the lower limit of its adhesions. The secretory and fæcal contents of the distal portion are thus dammed up, leading to appendicitis in its various forms.

Dr. Hertz, while admitting the occasional presence of a true kink near the end of the ileum, which leads to more or less obstruction, is of opinion that this kinking has in every instance been due to adhesions caused by an antecedent attack of

the transverse colon and of the hitching up of the hepatic flexure by adhesions to the kidney and abdominal wall, and mentioned also that the splenic flexure was firmly fixed by the strong costo-colic ligament. The result of this is sharp angulation at the flexures, amounting practically to definite kinks, which produce great obstruction to the onward passage of the solid fæcal material. The kink of the hepatic flexure may become almost completely occluded, and if torsion of the large bowel occurs behind the hepatic flexure, volvulus of the cæcum will be produced.

(6) *The Sigmoid Kink.*

Mention has already been made of the acquired

adhesions which fix the sigmoid where it crosses the brim of the true pelvis on the left side. At this point a definite kink is formed which prevents the regurgitation of feces from the pelvic colon upwards into the large bowel.

Sometimes two kinks are produced, owing to the ends of the sigmoid loop being attached together by firm adhesive bands, the loop itself being free. If this loop becomes unduly lengthened torsion may occur, and we get the well-known volvulus of the sigmoid produced. In many of these cases there is a progressive elongation of the pelvic colon, including the rectum. It is extremely difficult to empty the loops of such an elongated rectum which coils along the pelvic floor, as all expulsive effort acts at a mechanical disadvantage. As a result the rectum may become enormously distended and may never become completely evacuated, resulting in constant auto-intoxication.

C. GASTRO-INTESTINAL STASIS AND OTHER SEQUELÆ.

Among other important results of visceroptosis are *displacements of the pelvic organs* proper.

One physician has found no less than 80 per cent. of his female patients with visceroptosis had marked retroversion of the uterus, and the statement has been made by a well-known gynæcologist that the majority of all gynæcological patients have visceroptosis.

Enough has already been said about the relation of visceroptosis to *constipation*, which is mainly due to the various adhesions and kinks above described. *Mucous colitis* is in a large number of cases due to the same cause. It is also believed that the frequent occurrence of *carcinoma* in the large bowel is the direct result of irritation due to the passage of solid fecal material through the various kinks and angulated flexures.

There are also all the phenomena of *auto-intoxication* (so-called ptomaine poisoning), directly due to the *chronic intestinal stasis*, among which may be mentioned diminished resistive power to the entrance of pathogenic micro-organisms, such as the tubercle bacillus, the *Bacillus coli* and the specific germs of infective diseases; cystic degeneration of the breasts, which may pave the way to the development of carcinoma; impaired circulation, manifested by cold, clammy, and often livid hands and feet; progressive emaciation due to loss of

fat; dark staining of the skin, particularly in certain regions; general muscular debility; general depression of mind and body, and absolute incapacity for prolonged physical or mental exertion.

DIAGNOSIS.

The symptoms of visceroptosis may be divided into three groups:

(1) Local symptoms connected with the displacement of the organ or organs affected.

(2) Symptoms of neurasthenia.

(3) Symptoms of auto-intoxication.

It is well to remember that both local and general symptoms are, as a rule, in no sense proportional to the actual visceral displacement. Thus, the condition may be extreme with practically no symptoms whatever, or the patient may simply have a few vague dyspeptic or nervous symptoms indicating a slight degree of dyspepsia or neurasthenia, which induce her to consult a physician, who then discovers the abnormal condition of the organs quite accidentally in the course of his routine examination. In most well developed cases there are generally well-marked *dyspeptic symptoms* (e.g. flatulence, nausea, or actual vomiting) and constipation. The patient is often a woman, somewhat pallid and emaciated, and has usually lax, flabby abdominal muscles. There is often a history of constipation of long standing which may alternate with periodic deceptive diarrhoea. There is often considerable *discomfort and pain*, which varies in position according to the part most affected, and is largely the result of some obstruction along the course of the gastro-intestinal tract. Wilms believes that the pain is actually produced by the traction of the displaced viscera on the mesenteric attachments, the pain sensation being referred to the endings of the cerebro-spinal nerves distributed to the parietal peritoneum. Over-distension of a loop of the bowel leads to a stretching of the mesentery and indirectly to tension of the parietal peritoneum. It is therefore easy to understand how the pain may be present in regions somewhat remote from the seat of the lesion in the case of visceral displacements. The pain is specially marked in hyper-sensitive neurotic people.

There may be great discomfort, pain and tenderness over the cæcum and ascending colon. Associated with this there is sometimes pain and

tenderness below the last rib on the right side, and often along the distribution of the ileo-inguinal and ileo-hypogastric nerves. The pain in the loin simulates very closely the pain of renal colic, and has frequently led surgeons to explore the right kidney.

The relief of symptoms sometimes observed after such futile operations is attributed to the accidental division of adhesions and partial ~~obliteration~~ *liberation* of the ascending colon.

When the distended cæcum occupies the true pelvis, a dull pain is experienced in the region of the right sacro-iliac joint, which is much exaggerated during defæcation. The pain and tenderness in connection with distension of the transverse colon is generally found along the course of the U-shaped loop descending into the pelvis. Obstruction of the splenic flexure is often accompanied by a gripping pain along the ascending limb of the prolapsed transverse colon, and often by a dull aching pain in the left loin. There may be great pain in the left iliac region in the case of the fixed, shortened sigmoid colon, greatly aggravated by defæcation.

There is often distinct *tenderness* over the fixed portions of the prolapsed bowel, particularly when kinks are present. The tenderness and sensation of nausea on palpation of a movable kidney are very characteristic.

All the *symptoms tend to get worse as the day goes on, and are usually aggravated by exertion* of any kind, so that frequently the patient is unable to stand or walk for any length of time without considerable discomfort and constant fatigue. The *symptoms will often entirely disappear on lying down*, and are nearly always diminished by raising the abdomen by means of some support. Glenard's test was to stand behind the patient, and with both hands lift up the abdomen from below, when the pain and discomfort were often instantly relieved. Splashing sounds can often be elicited on manipulating the distended prolapsed stomach. A special symptom noticed by many observers is the frequency of pain and fatigue during the hours of duodenal digestion, more particularly when there is evident gastropnoxis. The patient will often say that she feels much worse about 11 a.m. and 4 p.m. This symptom may make one suspect duodenal ulcer, and, indeed, it is often actually due in many cases to duodenal distension.

Amongst the *neurasthenic symptoms* so commonly associated with visceroptosis may be mentioned general malaise, lack of vigour, inca-

capacity for work, irritability, lack of power of concentration, depression of spirits, loss of memory, sleeplessness, and various neurotic and hysterical manifestations. Some of these are no doubt due to *chronic auto-intoxication* (the result of intestinal stasis), to which we may especially attribute the cold hands and feet, the brown pigmentation of the skin, and most important of all, the progressive emaciation due to absorption of the adipose tissue.

The accompanying diagram (Fig. 2) illustrates a very typical case recently under my care. The patient was a thin, unmarried woman, aged 40 years, who first consulted me for symptoms of neurasthenia, with a history of having recently undergone a rest cure in a nursing home for this condition. Twelve years previously she had been under the care of Sir Lauder Brunton, who then diagnosed movable kidney. She was also seen by Sir Frederick Treves, who did not consider it necessary to operate and she was accordingly treated by a special kidney belt. She remained fairly comfortable for three years, when she had a complete nervous collapse due to a mental shock. This was nine years before coming under my observation. She remained delicate and frequently complained of severe pain in the back and right loin. I found her suffering from numerous nervous symptoms—languor, general inertia, irritability, inability to remain in crowded places, etc. The skin had an unhealthy pallor; there was both pain and tenderness in the right loin and to some extent in the left loin also, and a certain amount of flatulent dyspepsia. The diagram illustrates the position of the abdominal viscera as seen with the X-rays. The kidneys are sketched in to indicate their position as discovered by palpation. It will be seen that the right kidney is much prolapsed while the left was readily palpable well below the costal margin, and both were freely movable. The stomach is shown as lying almost vertical, with the pyloric extremity lying underneath the umbilicus. The cæcum is right down in the pelvis, while the hepatic flexure of the colon lies below the level of the iliac crest. The transverse colon was somewhat constricted and prolapsed in a V-shaped fashion, the apex of the V being well down in the pelvis. The splenic flexure of the colon was practically in its normal position situated close to the cardiac end of the stomach, where it formed an acute angle with the descending colon, being maintained in position by the costo-colic ligament. It may be said in passing that it is not commonly understood how high up the splenic flexure of the colon normally is. The X-ray examination was made with the patient in the erect attitude. The special body type already alluded to with the contracted upper part of the abdomen and the flattened epigastric, umbilical and hypogastric regions was particularly characteristic.

The particular form of visceroptosis which is perhaps the commonest, and certainly the one which has attracted most attention, is *nephroptosis* or prolapse of the kidney. There are often no symptoms whatsoever, and this will be readily understood when it is remembered that one in every three women have a displaced kidney, which is often discovered quite accidentally in the course of a routine examination. In such a case it is often unwise to draw the patient's attention specially to this abnormality, unless a remark is added that a large number of women have it without causing the least inconvenience. The bi-manual method is the

only satisfactory form of examination, and the patient should be examined lying on her back, on either side, and also in the standing position. The symptoms are in no sense in proportion to the degree of displacement, and it is, indeed, stated that only one out of every ten cases of movable kidney exhibits definite local symptoms. On the other hand, there may be a feeling of lack of support in the loins, or a dragging dull pain, continuous or intermittent in the same region, and often relieved by lying down. There is occasionally frequency of micturition, which may be associated with a burning sensation referred to the vulvar region. In a certain number of cases we have the occurrence of the so-called Dietl's crises, consisting of paroxysmal attacks of intense pain, nausea and vomiting, with high-coloured urine loaded with urates and sometimes containing albumen and blood. These paroxysms are attributed to kinking of the ureter and torsion of the renal vessels and nerves. After the lapse of some years a condition of hydronephrosis may become developed, characterised by the usual disappearing swelling and intermittent polyuria.

Displacement of the liver (*hepatoptosis*) may exhibit no special symptoms, though there may be some discomfort in the right hypochondrium or referred to the right shoulder, with flatulence or other dyspeptic symptoms. There is sometimes a bearing-down sensation below the ribs, and occasionally symptoms not unlike those of gall-stones. An examination of the patient in the erect attitude may reveal a bulging below the right costal margin, due to the convex upper surface of the organ.

Finally, it may be said that *in the case of gastroptosis and enteroptosis, the diagnosis can only be accurately made by having recourse to radiography, and carefully following by means of the fluorescent screen the course of a bismuth meal from the stomach to the rectum.* In no department of medicine or surgery is radiography more valuable as a means of diagnosis. It is often essential to have six or more examinations in the course of forty-eight hours. The majority of the accompanying plates are from radiograms taken by my colleague, Dr. Alfred Jordan.

TREATMENT.

(a) Prophylactic.

The importance of prophylactic or preventive treatment cannot be over-estimated. Mr. Lane is of opinion that the initial conditions predisposing to visceroptosis are often present in quite early life and believes that immense harm ensues owing to the gastro-intestinal disturbances so common in infants fed on artificial substitutes for the natural mother's milk. The result of infantile indigestion is to produce inflammation and distension of the intestines and often irritation of the peritoneum.

Parents ought to be extremely particular in regard to *inculcating regular habits* in their children, as the prevention of constipation is all-important. I may allude again to the unsuitability of the usual high lavatory seats for the use of children, and the necessity of providing footstools high enough to permit of the children adopting the squatting posture.

Children should be encouraged to *adopt the recumbent attitude as much as possible* by lying down on the floor, or on sofas, etc., instead of being perched up on high chairs, more particularly after meals.

Great care should be exercised in not permitting women with the characteristic body form already described to get up too soon after confinement or after debilitating illnesses. If the patient is thin, with relaxed abdominal muscles, she should rest on a couch for at least one or two hours daily. In practice I find this rest can be most readily taken after lunch.

On no consideration should corsets be worn that exert pressure on the base of the thorax and upper part of the abdomen. The patient should be specially cautioned against lifting heavy weights, such as large pieces of furniture. One patient came under my observation in whom a sudden dislocation of the right kidney was produced by an attempt to open the lower sash of a window which was stiffened and fixed in position through long disuse. Much permanent damage may be done in the course of a vigorous but injudicious spring-cleaning or a long, exhausting day's shopping.

Physical exercises designed more particularly with the object of strengthening the abdominal muscles are most valuable. *Constipation must be avoided at all hazards* by the ingestion of suitable diet, by daily open-air exercise, and by acquiring regular daily habits, mild laxatives being often necessary in the case of women living a sedentary life.

If there is a tendency to emaciation, milk, cream, eggs, and other *nutritious and fattening foods* ought to be partaken of freely so as to produce the necessary amount of adipose padding. The modern fashionable woman's desire to acquire a thin, willowy figure is neither æsthetic nor hygienic. I often wonder if visceroptosis is as common amongst French and German women with their rounded, plump figures as it is in the England of to-day.

(b) Medical and Hygienic Treatment.

Medical treatment resolves itself largely into relief of the various symptomatic manifestations and may also serve to arrest the process of displacement before the graver pathological sequelæ have occurred. Careful attention to diet is most important, the objects being to promote the formation of adipose tissue, and at the same time to

eliminate as far as possible indigestible articles of food, which would tend to accumulate in undigested masses in the cæcum and other portions of the large bowel. Stomachic medicinal remedies, such as alkalies, acids, carminatives, disinfectants and involuntary muscle stimulants, given at periods carefully calculated in relation to meals and to the processes of digestion, are all of considerable value in the hands of a competent physician.

The symptoms of early intestinal stasis may have to be controlled to some extent by suitable aperient remedies. Personally, I prefer to give small doses of such a drug as cascara three times daily to giving a larger dose at bedtime. I find that cascara given in this way acts as a gentle stimulant to peristaltic movement, and so enables the bowel to overcome the obstructive difficulty consequent upon a mild degree of enteroptosis. I generally employ the excellent well-known "cascara evacuant" preparation of Parke Davis & Co. in 10 or 15-minim doses thrice daily. I generally also prescribe a weekly mercurial pill and a daily tumblerful of hot water sipped slowly while dressing in the morning.

During the past year I have been much struck with the undoubted benefits from the regular use of *liquid petroleum* (paraffin) in cases of enteroptosis even when accompanied by well-marked chronic intestinal stasis. Special purified preparations under the names of chrysomol, etc., have been put upon the market by all the principal manufacturing chemists. These may be obtained tasteless or made palatable by various flavouring agents. I generally begin with doses of two teaspoonfuls twice or thrice daily, and in some cases increase to one tablespoonful doses. During the administration of petroleum, aperient drugs may often be almost entirely suspended, which is a great advantage. In addition to its lubricant action, petroleum seems to exercise a most beneficial effect on the intestinal mucous membrane, and its value in many cases of mucous colitis is quite remarkable.

I am strongly impressed with the great value of *abdominal massage* in conjunction with rest in the prone or supine position during some hours of each day. In not a few cases the strengthening of the abdominal walls is all that is necessary to, secure the adequate support of the abdominal organs. The massage should be administered by a trained masseuse, and I have found electrical stimulation by means of the Faradic current to be an important help in the same direction. In advanced cases it is advisable to go further, and a *prolonged rest cure* of six weeks or longer in a recumbent position with massage, electrical treatment, special feeding, with the object of increasing the amount of general adipose tissue, is often followed by most beneficial results.

Physical exercises, with the object of strengthening the abdominal muscles, are also very valuable,

and should be performed both in the lying and in the standing position. I have found the following movements specially useful: (1) Clasping the hands behind the neck in the supine position, raising the extended legs almost to a right angle with the trunk, slowly letting them fall, and then raising them again just before they reach the ground, and repeating the process several times. (2) Or *vice-versâ*, with the legs extended on the ground, slowly sitting up, with the arms extended forwards and till the fingers touch the toes, and then slowly lying down again. (3) In the erect posture, extending the arms above the head and with the legs rigidly extended, bending the trunk forwards, and trying to touch the toes with the fingers. (4) Also in the erect attitude, bending first to one side and then to the other, and twisting the body round first in one direction and then in the other. (5) With the arms extended, leaning back as far as possible. And (6) beginning in the erect posture and standing on the toes, slowly assuming the squatting position with the knees bent outwards, and then slowly rising again.

It is an excellent plan for patients with visceroptosis to *sleep at night with the foot of the bed raised* by suitable supports. Seven or eight hours in this position may do much to counteract the tendency to ptosis which is present during the waking hours of the day.

(c) *Treatment by Mechanical Supports.*

The most fashionable, and in some cases the most efficacious, ~~treatment~~ *treatment* consists in the wearing of specially designed mechanical supports, either in the form of belts or corsets, the great principle being to increase the upward intra-abdominal pressure, and thus counteract the tendency to dropping of the viscera. Great care must be taken that *the pressure of the bandage, belt or corset shall be exerted over the lower part of the abdomen, the direction of pressure being upwards and backwards.*

Ernst has designed a special enteroptosis belt which is intended to exert the same pressure as would be exerted by Glenard's two hands applied to the hypogastrium when standing behind the patient, while Curtis has invented a most useful abdominal support, the special feature consisting in the providing of pivot-screws attached to the hypogastric plates and to the posterior pads, which prevent both upward and downward movement of the anterior supporting plate during the various movements of the body: at the same time the division of the anterior plate by a vertical movable junction in the middle line of the body admits of the belt being readily put on without straining of the lateral springs, besides allowing the two halves to approximate to the shape of the particular abdomen to which it is fitted.

Dr. Hertz, in referring to mechanical supports,

while admitting that the relief of the abdominal discomfort and circulatory symptoms in visceroptosis obtained by the use of a suitable abdominal support is very striking, states that notwithstanding this relief of symptoms, observation with the X rays shows that the position of the dropped stomach and colon are often unaffected. Fig. 8, representing viscera in one of my recent cases of visceroptosis, proves that the stomach can be considerably raised by the use of a suitable belt, although the elevation is not so marked as that produced by contraction of the abdominal muscles. In cases where the

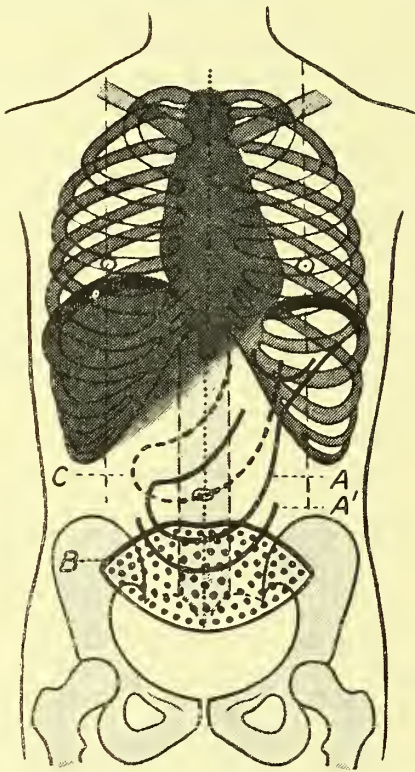


FIG. 8.—Diagram showing the effect of a Curtis belt and of contracting the abdominal muscles in raising the stomach. B. The belt *in situ* with its pads partially covered with perforated zinc in place of the usual metal plates. A. A'. Position of the stomach with and without the belt. C. Position of the stomach (with or without the belt) when the patient contracted her abdominal muscles. The case was one of gastropnoptosis and nephroptosis in a woman, *æ*t. 29 years, who has suffered from dyspepsia for many years, with flatulence, heartburn and constipation, the symptoms always getting worse as the day went on and always being relieved by lying down. Is now deriving great benefit from wearing a special abdominal support.

transverse colon has dropped down into the pelvis, it is of course impossible for a support producing pressure in the hypogastrium to raise the colon to any considerable extent, although even in these cases the use of the belt may give great relief,

probably owing to the raising of the stomach and ileum. As regards corsets, the great essential is that the corset shall exert pressure on the lower part of the abdomen, having its upper part quite loose in front, so that no pressure whatever is exerted on the base of the thorax or upper part of the abdomen. Special enteroptosis and kidney corsets are supplied by Sykes, Josephine & Co., Marshall & Snelgrove, Bruce Evelyn & Co., and the Stauder Institute. Personally I have found the best results from wearing one of the above-

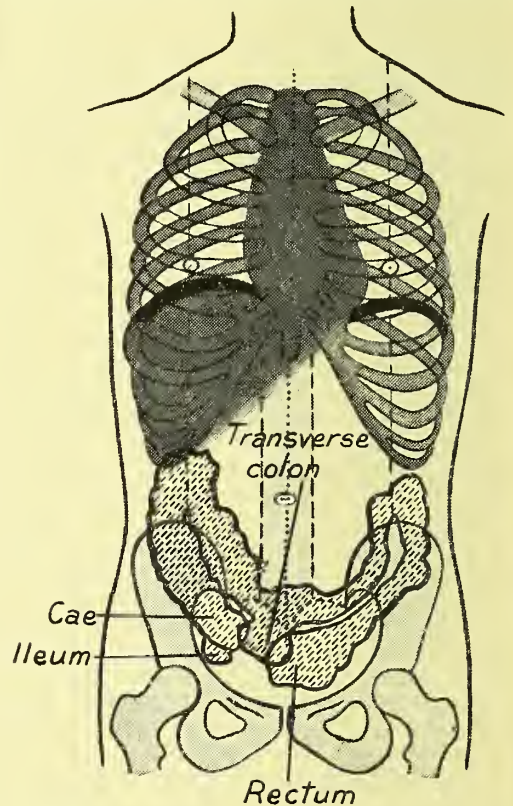


FIG. 9.—Diagram of lower end of ileum and of colon from severe case of chronic intestinal stasis, indicating appearances forty-nine hours after bismuth meal. Patient was a woman, *æ*t. 56 years, who had suffered from indigestion since the age of fourteen, accompanied by constipation and headache, and whose condition had become greatly aggravated during the past six years. The ileum, the caecum, the transverse colon, the sigmoid and the rectum were all "bunched" together in the pelvis and pressing upon the uterus, broad ligaments and ovaries. The patient was greatly benefited by the operation of short-circuiting. (Drawing by Dr. Alfred Jordan.)

mentioned abdominal supports (belts) with or without a light, well-fitting corset, which should be sufficiently loose above to allow of the hands of the wearer to be freely introduced underneath the upper free margin; corsets of the type of the

"Temple" corset of Marshall & Snelgrove fulfil this requirement.

As regards ptosis of the kidney, Ernst and others have devised special kidney supports which are sometimes most useful, while all the principal *corsetières* stock so-called "kidney corsets," which are usually furnished with special pads. My experience of these loin pads is that they are apt to do more harm than good, as they are apt to work up above the kidney and displace it still further down into the abdomen. A well-fitting enteroptosis corset or support exerting upward and backward pressure below the umbilicus is often much more efficacious.

(d) *Surgical Treatment.*

As regards operative treatment, surgical measures are only to be adopted after hygienic, dietetic and mechanical measures have been given a fair trial. In the case of nephroptosis the indications for operation are more or less constant loin pain, producing chronic invalidism, Dietl's crisis, and intermittent hydronephrosis. If the rawed surface of the kidney is firmly fixed directly to the quadratus lumborum muscle it usually becomes permanently anchored. The mortality of nephrorrhaphy is practically *nil*, Sir Henry Morris having no deaths in nearly two hundred cases.

In cases of advanced enteroptosis with intestinal kinks, obstinate constipation and progressive emaciation, the result of chronic intestinal stasis, Mr. Arbuthnot Lane strongly advocates having recourse to operative measures.

In a few instances it is sufficient to divide the constricting bands and adhesions, but in a large proportion of cases this only affords temporary relief, as the obstruction is apt sooner or later to recur and the adhesions to re-form.

A much more satisfactory measure is to divide the ileum near its lower end and short-circuit the divided end into the upper part of the rectum or the immediately adjacent sigmoid colon. This operation is attended by no more risk than an ordinary gastro-enterostomy.

In a certain proportion of instances dilatation of the colon above the ileo-rectal junction occurs, producing considerable discomfort and even pain. In these aggravated cases Mr. Lane strongly recommends the removal of the whole of the large bowel above the junction. Except in patients who are extremely toxic and feeble, the resection of the large bowel is unaccompanied by any special danger to life, particularly if normal saline solution is introduced into the subcutaneous tissue at the commencement of the operation. This often does away with the post-operative vomiting, which is apt to occur if the saline is not introduced so as to raise the blood-pressure. In patients with advanced toxæmia special precautions are necessary to protect the abdominal incision against risk of infection.

In cases where the stomach is much dilated, it is often of value to perform a gastro-enterostomy, and at the same time divide the adhesions attaching the pylorus to the liver and gall-bladder. In the case of one of my patients, to whom I have already once or twice alluded, Mr. Lane resected the cæcum, ascending, transverse, and descending colons (specimen exhibited), after dividing the ileum, and effected an anastomosis between the divided end of the ileum and the lower portion of the sigmoid. The patient, who had been a hopeless chronic invalid for many years, now enjoys perfect health, and is so strong and active that she has secured lawn tennis prizes, being able to play seven sets of tennis without undue fatigue. She gained no less than two stones in weight after the operation.

Resection of the whole bowel certainly seems heroic treatment; but the results are so good that it is surely better to have this radical cure for intestinal stasis performed than leave the patient in a miserable state of suffering and chronic invalidism, rendering life almost insupportable.

Special Note on Chronic Intestinal Stasis from the Radiographic Aspect.

Contributed by ALFRED JORDAN, M.D.,
Medical Radiographer to Guy's Hospital and Royal
Hospital for Diseases of the Chest.

THE effect of the upright posture in altering the position of the abdominal viscera may commence very early in life—before the age of six years; but many live a long life without the occurrence of any dropping of the viscera. The evil effects of the dropping are secondary as far as the intestines are concerned; great dropping of the transverse colon may have existed for years without producing any symptoms, or any deviation from health. This is especially the case in early life. With the approach of middle life, however, symptoms and signs of intestinal stasis begin to appear, and tend to progress unless efficient measures be taken to prevent them. Stagnation of the fæces takes place in the dropped colon, and may amount to 150 hours or more in severe cases. The dropped bowel lies in the true pelvis: the lower end of the ileum, the cæcum, the hanging loop of the transverse colon, the sigmoid and the rectum lie in close contact, and press upon the pelvic organs proper—the uterus, Fallopian tubes and ovaries in women.

The sigmoid and rectum are often greatly elongated; this is especially the case in children who have become the subjects of tuberculous disease of the bones and joints. The pelvic colon and rectum are often many times the normal length, and fæcal matter may be retained in the rectum for days, even though there may be a small evacuation daily. In other cases the sigmoid is tied down by a very short mesentery; the sigmoid then takes a

short straight course to the rectum—a favourable state of things unless the sigmoid be actually compressed by fibrous bands, when obstruction is very likely to occur. Fibrous bands may tie down other parts of the large intestine, and one of the most important of these is the transverse colon just beyond the hepatic flexure. Fibrous bands may attach this point to the under surface of the liver, and the pylorus or duodenum or bile-ducts may be involved in the same bands.

The stasis in the large intestine is usually accompanied by delay in the lower coils of the ileum. This delay may be brought about in at least three different ways: In feeble subjects the contents of the lower coils of the ileum remain there because the bowel is too feeble to raise its contents out of the pelvis over the pelvic brim and into the cæcum, which is already well filled with fæces. This condition is found in some of the most severely toxic cases, especially women. They are feeble, apathetic and unhappy women with wasted bodies, stained skin, cold extremities and nodular breasts, and it is wonderful to see how these and other symptoms and signs clear up after the relief of their stasis by the operation of “short-circuiting.” I have known the skin so brown that the woman was thought to be suffering from Addison’s disease, and the breasts so large and nodular that she was advised to have them removed as being cancerous. Within a few weeks after the operation the skin in the one case, the breasts in the other, had become normal, and the patient had begun to improve in every way.

The second cause of stasis in the ileum is the ileal kink, first described by Mr. Arbuthnot Lane. I have been able to diagnose the existence and the position of an ileal kink in a number of cases of intestinal stasis. By observing the condition of the parts at operation and comparing with my previous X-ray findings I have been able to exclude many sources of error, and I am now able to diagnose the presence of an ileal kink with great confidence, although it still happens occasionally that a kink is present whose existence I had failed to discover. This occurs far more frequently in hospital than in private practice, for in hospital I am not able to make examinations at frequent intervals, and the patients are very often kept in bed. The most extreme ileal kinks produce obstruction even when the patient is in bed, but the more usual kink is obstructive only in the upright posture, when the ileum is pulled down on either side of the kink.

The third variety of ileal kink is due to the appendix; this organ may lie in close contact with the ileo-cæcal entrance in such a way as to prevent the passage of the ileal contents into the cæcum when the patient is upright. The end of the ileum may be actually indented by the appendix, and the last inches of the ileum may be greatly hypertrophied. When the cæcum and ileum

are held up in this way by the appendix there are, as a rule, no ileal adhesions; this is what we should expect if we remember that ileal adhesions are brought into existence as the result of the downward pull of the cæcum and ileum, and of the corresponding upward pull exerted by the mesentery. I have been able to obtain X-ray evidence of this form of ileal stasis in several cases.

The effect of the loaded ileum is felt throughout the length of the small intestine, and the whole of the ileum and jejunum is pulled down until a fixed point is reached. Normally the first fixed point to be reached is at the end of the duodenum, for this portion of bowel is held up by a strong peritoneal band. Consequently a sharp kink is produced where the jejunum is pulled down vertically at its commencement. I have seen this very frequently in making X-ray examinations of the duodenum, the jejunum passing down vertically and producing a kink, the duodenum contracting vigorously in a sequence of strong writhing movements in its attempt (often vain) to overcome the effect of the kink. In such cases the duodenum is distended, sometimes to double the normal width, and it is elongated. In the most severe case of the kind I observed the duodenum writhing for nine hours (with great pain to the patient) in vain endeavours to overcome the obstruction due to the kink. Occasionally a quantity of bismuth emulsion would pass through into the jejunum and commence coursing through the coils of the jejunum at a rapid rate. Because of the stagnation in the ileum bacteria invade the small intestine from the cæcum; infection of the duodenum, already distended as the result of the duodeno-jejunal kink, then takes place; its mucous membrane is attacked by bacteria, and ulceration of the congested duodenal mucous membrane is very apt to take place. I have seen the association of duodenal ulcer with an ileal kink in a number of most convincing cases, and I am now able to predict, on discovering a distended, “writhing” duodenum, that I shall find an ileal kink, or well-marked ileal stasis at the subsequent X-ray examinations. Other effects of the bacterial invasion of the duodenum show themselves as chronic pancreatitis (resembling the chronic mastitis to which reference has already been made) and cholecystitis. Very frequently gall-stones are formed.

The whole subject of intestinal stasis is fraught with the most intense interest, for it touches upon the medicine and surgery of the alimentary tract at every point, and clears up and correlates a number of phenomena hitherto isolated, the explanation of the occurrence of which had given rise to many divergent theories and fanciful explanations. There is much work still to be done, and there is need for many earnest workers in this most promising field of research.

April 29th, 1912.